(6) mixing the aqueous mixture and the fourth mixture together in a weight percent ratio of from 5/95 to about 50/50 aqueous mixture/fourth mixture to form a microemulsion;

(7) mixing the microemulsion with a thickening agent comprising a polymer or copolymer of acrylic acid monomer together in a weight ratio of from about 0.5/99.5 to about 5/95 to form a thickened microemulsion;

(8) coating the thickened microemulsion onto the substrate; and

(9) irradiating the microemulsion in order to form the pressure sensitive adhesive in contact with the substrate.

A version marked up to show changes made to the claim(s) relative to the previous version of the claim(s) is attached.

Remarks

Applicant amends claims 8, 9, and 15 to more completely claim the present invention. The claim amendments are offered to correct certain formal defects in the claims as filed and are offered free of any intent to narrow the scope of what Applicant considers as her invention. Support for the amendments may be found throughout the specification as filed, including the documents and references cited and incorporated therein.

Claim Rejections based on 35 U.S.C. § 112

The Examiner rejects claim 8 under 35 U.S.C. § 112, first paragraph, on the ground that the specification does not reasonably provide an enabling disclosure for the full scope of microemulsions read into claim 8 by the Examiner. To expedite prosecution, Applicant has amended claim 8 to depend on claim 1. Applicant believe this amendment fully addresses the ground of rejection.

The Examiner also rejects claims 9-16 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject

matter of the methods of the invention. Specifically, the Examiner appears to object to Applicant's use of the term "composition" to refer to the polymerized microemulsion pressure sensitive adhesive. Although Applicant does not believe there is any substantive difference between the terms "polymerized microemulsion pressure sensitive adhesive composition" and "polymerized microemulsion pressure sensitive adhesive," Applicant has deleted reference to the term "composition" in the term to overcome the rejection and facilitate prosecution of the claims.

Claim Rejections With Respect to the Tran et al Reference

The Examiner rejects claims 1-13 under 35 U.S.C. § 102(e) as anticipated by the disclosure of U.S. Pat. No. 6,103,316 to Tran et al., alleging that the Tran reference discloses all of the salient features of the rejected claims.

Applicant respectfully traverses. The pressure sensitive adhesives disclosed by the Tran reference are not microemulsions as defined and described by the present invention. The Examiner cites specifically to column 12, line 13, of the Tran reference where it states: "This combined mixture is mixed under high shear conditions until the premix materials form droplets less than 1 micrometer in diameter and are homogeneous when viewed under an optical microscope." The Examiner appears to rely on the, "less than 1 micrometer," to encompass the domain size typical of the microemulsions of the present invention, on the order of 10 nm. However, the next sentence in the reference clearly indicates that macroemulsions are being discussed: "The homogeneous oil-in-water emulsion will preferably have a paste-like appearance." As U.S. Pat. No. 5,670,557 (Dietz et al.), cited by the Examiner in connection with another rejection below, points out at column 1, line 21: "By contrast with conventional milky emulsions, for which the stability is of purely kinetic origin, microemulsions are thermodynamically stable and form spontaneously at contact. The small size of the spherical droplets (about 10 nm) dispersed in the continuous medium explains their optical transparency. . . " Applicant has succeeded in identifying a class thickening agents that are capable of

10nm = 0,010µ

working with microemulsions without disrupting interrupting their thermodynamic stability; such a problem was not in view to the authors of the Tran reference.

With respect to the subject matter of claim 2, Applicant would additionally point out the table at column 20 of the Tran reference where polyacrylic acid, provided as the trademarked product ACRYSOL A3, is mentioned among the suspending agents that can be used, rather than among the thickeners listed on the continuation of the table in column 21. Why this entry would not be employed as a thickener in the present invention becomes clear on close inspection; a molecular weight is listed as 190 (the Applicants believe 190,000 was actually intended by the authors of the reference). Such a compound would generally be relatively non-viscous and would not perform optimally as a thickener for a microemulsion system. Such a thickening agent also falls outside the molecular weights identified in claim 2.

For at least these reasons, Applicant respectfully asserts that the subject matter of the rejected claims is neither anticipated by nor rendered obvious in light of the disclosure of the Tran reference.

Claim Rejections With Respect to the Coughlan Reference

The Examiner also rejects Claims 1-16 under 35 U.S.C. § 103(a) as rendered obvious over the disclosure of U.S. Patent 4,564,010 (Coughlan et al) in view of U.S. Pat. No. 5,670,557 (Dietz et al.). The Examiner argues *inter alia* that it would have been obvious to one skilled in the art to employ the microemulsion taught by Dietz et al as the polyacrylic latex taught by Coughlan et al.

Applicant again respectfully tranverses. Applicant points out that, in parallel with the discussion above, although the '557 reference discusses microemulsion adhesives, the '010 reference which discusses acrylate thickeners does not. The ordinary artisan, at the time the present invention was made, would be aware of a range of chemical agents that, while suitable as thickeners for macroemulsions, fail when added to a microemulsion. As the cited primary Coughlan reference is concerned with macroemulsions, it is not surprising that there is nothing in the reference that suggests

any particular suitability of its disclosed thickening agents to thicken and not destabilize a microemulsion. With this, there is no suggestion to an ordinary artisan to apply its teachings with the microemulsion systems of the Dietz reference to arrive at the present invention, *viz.*, the selection of particular thickening agents that are uniquely suited for microemulsion systems.

Applicant therefore respectfully submits that the rejected claims are patentable over both the Coughlan and Dietz references, alone and in combination.

In view of the arguments and amendments offered herein, Applicants respectfully submit that the Examiner's grounds for objection and rejection are overcome and respectfully solicit reconsideration and withdrawal of the rejections and allowance of the application.

Respectfully submitted,

Date: December 16, 2002

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Version With Markings to Show Changes Made:

8 (amended). A pressure sensitive composition comprising a polymerized microemulsion composition according to claim 1 [a pressure sensitive microemulsion and at least one thickening agent comprising a polymer or copolymer of acrylic acid].

9 (amended). A method of forming a polymerized microemulsion pressure sensitive adhesive [composition] in contact with a substrate, comprising the steps of:

(1) providing an aqueous microemulsion comprising one or more hydrophoblic monomers, one or more hydrophilic and/or amphiphilic monomers and one or more initiators;

(2) combining the aqueous microemulsion with at least one thickening agent comprising a polymer or copolymer of acrylic acid;

(3) coating the thickened microemulsion onto the substrate; and

(4) irradiating the microemulsion in order to form the pressure sensitive adhesive [composition] in contact with the substrate.

15 (amended). A method of forming a polymerized microemulsion pressure sensitive adhesive [composition] in contact with a substrate, comprising the steps of:

(1) mixing hydrophilic monomer(s) and/or amphiphilic monomer(s) in a weight percent ratio of from about 100/0 to about 0/100 to form a first mixture;

(2) mixing hydrophobic monomer(s), having a glass transition temperature suitable for forming a hydrophobic pressure sensitive adhesive, into the first mixture in a weight percent ratio of from about 80/20 to about 10/90 hydrophobic monomers/first mixture to form a second mixture;

(3) mixing surfactant(s) into the second mixture in a weight percent ratio of from about 5/95 to about 30/70 surfactant/second mixture to form a third mixture;

(4) mixing initiator(s) into the third mixture in a weight percent ratio of from about 0.01/99.99 to about 2/98 initiator/third mixture to form a fourth mixture,

(5) independently, mixing water and water-soluble or water-dispersible additives together in a weight percent ratio of from about 100/0 to about 80/20 to form an aqueous mixture;

(6) mixing the aqueous mixture and the fourth mixture together in a weight percent ratio of from 5/95 to about 50/50 aqueous mixture/fourth mixture to form a microemulsion;

(7) mixing the microemulsion with a thickening agent comprising a polymer or copolymer of acrylic acid monomer together in a weight ratio of from about 0.5/99.5 to about 5/95 to form a thickened microemulsion;

(8) coating the thickened microemulsion onto the substrate; and

(9) irradiating the microemulsion in order to form the pressure sensitive adhesive [composition] in contact with the substrate.